

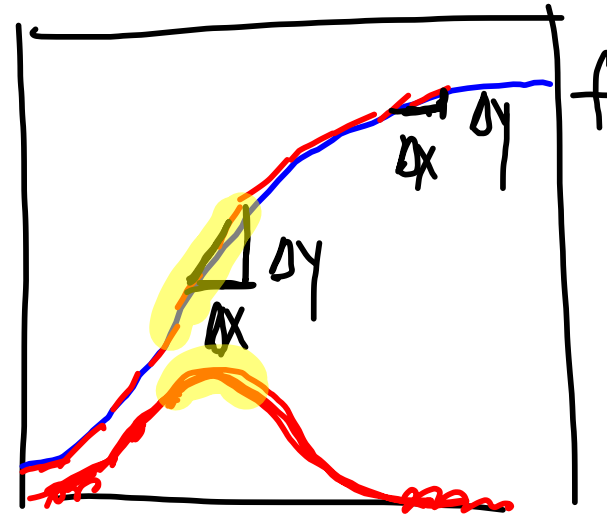
3.1 more on derivatives

people	prob
0	0
5	.027
10	.117
15	.253
20	.411
25	.569
:	:
:	:

lists & spreadsheet

data & statistics

prob



people

sketch f'

$$f' \approx \frac{\Delta y}{\Delta x}$$

people	prob	dx	dy	dy/dx

formula cell

$$dx = \text{delta list}(\text{people})$$

$$dy = \text{delta list}(\text{prob})$$

$$dy/dx = dy/dx$$



$$\lim_{h \rightarrow 0} \frac{f(a+h) - f(a)}{h}$$

slope of tan
derivative
 $f'(a)$

7. $f(x) = \sqrt{x+1}$ $a = 3$

find $f'(a)$ $x_1 = 3$ $y_1 = \sqrt{4} = 2$

$$x_2 = 3+h \quad y_2 = \sqrt{3+h+1} \\ = \sqrt{4+h}$$

$$\lim_{h \rightarrow 0} \left(\frac{\sqrt{4+h} - 2}{h} \right) \left(\frac{\sqrt{4+h} + 2}{\sqrt{4+h} + 2} \right)$$